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Subject: FPM Review of Robinson Flat Campground
(Report # NE95-4)

To: District Ranger, Foresthill RD, Tahoe NF

BIOLOGICAL EVALUATION OF THE RED FIR STAND AT ROBINSON FLAT CAMPGROUND
FORESTHILL RANGER DISTRICT, TAHOE NATIONAL FOREST

At the request of the Foresthill Ranger District, Forest Pest Management conducted an evaluation of the Robinson Flat Campground. On July 14, 1994 Anne Green and I (Bill Woodruff) visited Robinson Flat, and participated in a youth career day event. A cursory overview of the site was then made by Anne and myself. I returned on August 18 and October 19, during which the trees were examined for insect and diseases, and GPS data was collected to identify hazard trees and possible annosus root disease locations.

The red fir stand at Robinson Flat Campground can be characterized as "old growth". It contains a large number of decadent red fir (and a few lodgepole pine) that are in various stages of death. Loss of vigor in the conifers is causing a decline of the stand. Annosus root disease may be contributing to the loss of vigor. Heterobasidion annosum conks were not found, however. The attached GPS plot of Robinson Flat Campground shows the locations of trees with defects. Stumps with heart rot are also shown on the plot. Many sound stumps were present which were not mapped. Many of the trees, located on the GPS map, present hazards to visitors. The others need to be monitored.

On October 18, Robinson Flat received about 6 inches of heavy snow. I was in the campground the next day collecting GPS data, at which time, I talked with several campers, who were using the northernmost campsite. One of them told me that a couple of large trees, or parts of trees, fell somewhere in the area over the night. It concerned them, so they immediately moved their vehicles to safer locations.

This account emphasizes the importance of identifying and removing hazard trees from Robinson Flat Campground. Most tree failures occur as a result of winter snowloading. They also occur during high winds, which may be common at Robinson Flat because of its location in a mountaintop saddle. However, tree failures can occur year around. It is wise to survey campgrounds prior to opening them in the spring, to identify tree hazards. Tree hazards should be removed as soon as possible after they are identified. Many hazard trees have been recently removed from Robinson Flat Campground. More have developed since the last treatment. I am enclosing copies of two publications which will help



in identifying tree hazards in recreational sites: "Judging Hazard from Native Trees in California Recreational Areas:-- a Guide for Professional Foresters" by Wagener; and, "Accident Hazard Evaluation and Control Decisions on Forested Recreation Sites" by Paine.

Observations and Discussion

Robinson Flat Campground is located in an old growth red fir (Abies magnifica) stand that has a small component of lodgepole pine (Pinus contorta). The oldest trees are north and west of the meadow. The western portion of the stand appears to have been harvested using a shelterwood prescription. There is dense stand of red fir saplings and poles under the shelterwood trees. The oldest conifers appear to have poor vigor. This is primarily due to over-maturity. Other probable factors contributing to the poor vigor are high stocking, injuries, and soil compaction.

Red fir dwarf mistletoe (Arceuthobium abietinum f.sp. magnificae) and brown cubical rot (caused by Laetiporus sulphureus) were the only pathogens positively identified at Robinson Flat Campground. Neither appeared to be responsible for the extensive decline of the stand. The heart rot in some of the large red fir stumps appears to have been caused by annosus root disease. However, conks of Heterobasidion annosum were not found to confirm the presence of annosus root disease. And, only a small percentage of the stumps exhibited heart rot.

If present, annosus root disease could cause some of the observed decline in the red fir, especially after a decade of drought. However, red fir trees with good vigor are capable of surviving annosus root disease by growing wood faster than the disease is capable of destroying it. Controlling stocking levels in the stand effects tree vigor. Conifer stands below normal stocking will have better vigor and resistance to forest insects and diseases than overstocked stands. Your silviculturist can prescribe stocking levels to maintain good vigor in the conifers in Robinson Flat Campground.

Alternative Actions

1. No action. The old growth conifers north and west of the meadow in Robinson Flat Campground will continue to decline, and create hazards for visitors. The dense red fir regeneration and overstocked mature conifers will develop poor vigor and be susceptible to insects and diseases.
2. Remove old growth and hazard trees from activity areas. Hazard trees will be removed. Red fir will naturally regenerate in the openings created. Tree removal operations will thin the residual trees, thus improving vigor. Harvesting operations should be carefully executed to prevent damage to the residual fir trees where pathogens can infect them.

The physical appearance of the campground will change from that of dense old growth to dense mature red fir with some added openings stocked with red fir seedlings. The vigor and appearance of the trees in the untreated areas will remain unchanged. Without the benefit of thinning, the untreated trees will be more susceptible to forest insects and diseases.

3. Remove old growth conifers and thin remaining trees. Hazard trees will be removed. Red fir will naturally regenerate in the openings created. The residual trees will have good vigor as long as stocking levels are adjusted to provide it. Thinning will have to be done in stages to develop windfirmness in the residual stand. Thinning should be carefully executed to prevent damage to the residual fir trees where pathogens can infect them.

The physical appearance of the campground will change from that of dense old growth to a more open mature red fir stand. The thinned young red fir trees will grow into large trees in a shorter time, adding to the mature character of the stand.

4. Move the camping and activity areas, install interpretative signs. Several components of red fir development and succession are present: overmature, mature, young growth, and regeneration. Human activity will be moved out from under hazardous trees to the areas proposed on the attached map: "Proposal for Robinson Flat Complex". Signs describing red fir succession will be installed. These can be used for outdoor education on red fir biology and ecosystem management. Teachers from local schools might bring their classes to Robinson Flat Campground to picnic and study ecology. Old growth and other hazard trees will have to be removed from the activity areas.

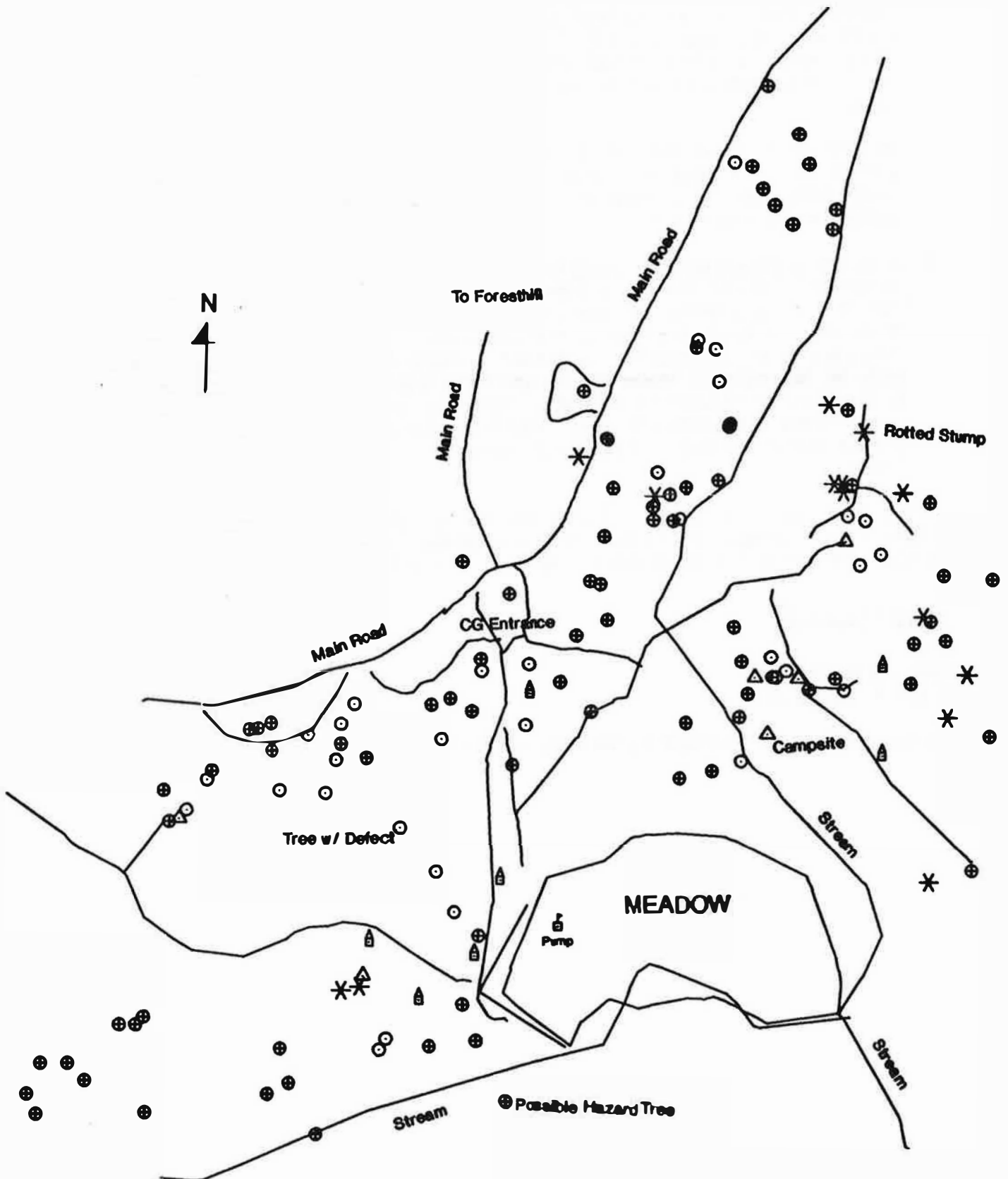
I hope this input is useful. I will return to Robinson Flat Campground this summer in an attempt to identify root pathogens. Sheri Smith, our entomologist is also available for assistance. We can be contacted at (916) 257-2151.

Bill Woodruff

BILL WOODRUFF
Plant Pathologist

Enclosures: Publications by Wagener and Paine

ROBINSON FLAT CAMPGROUND. Forest Hill RD



ROBINSON FLAT CAMPGROUND, Forest Hill RD



Scale 1:2000
NAD-87 CONUS
State Plane [CALIFORNIA ZONE 1 0401]

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Tick Interval - 2.5 Minutes

PROPOSAL FOR ROBINSON FLAT COMPLEX

CONCEPTUAL DRAWING NOT TO SCALE

